1 3.10 CULTURAL AND PALEONTOLOGICAL RESOURCES

- 2 This section identifies both on and offshore cultural resources (e.g., Native American
- 3 sites, shipwrecks) and paleontological resources in the Broad Beach Restoration Area
- 4 (Project area), and evaluates impacts to such resources that would potentially result
- 5 from the Project.

3.10.1 Environmental Setting Pertaining to the Public Trust

- 7 Project Area Location and Description
- 8 The Project study area includes the immediate vicinity of Broad Beach that would be
- 9 affected by the Project. This includes the beach area that extends laterally for
- approximately 6,700 feet from Lechuza Point to the western parking lot for Zuma Beach
- 11 County Park.
- 12 Off-site Project Area Location and Description
- 13 Off-site Project areas subject to potential direct Project impacts include the Trancas
- 14 Sediment Deposit, the Ventura Harbor sand trap, the Dockweiler State Beach borrow
- site, and the sand transportation routes (see Figures 2-7, 2-14, 2-15, and 2-16). The
- downcoast beaches in the vicinity of the borrow sites are also included in this area.
- 17 Relationship Between Cultural and Paleontological Resources, and Public Trust
- 18 Resources and Values
- 19 The proposed Project may have adverse impacts on cultural and/or paleontological
- 20 resources as offshore borrow areas in submerged lands have the potential to contain
- 21 marine cultural remains and historic shipwrecks. CSLC has jurisdiction over certain
- 22 cultural resources and considers impacts to them under its statutory authority and when
- exercising its public trust responsibilities (Pub. Res. Code §§ 6309, 6313, and 6314).
- 24 Additionally, the Governor's Executive Order W-26-92 states: "all state agencies shall
- 25 recognize and, to the extent prudent and feasible within existing budget and personnel
- 26 resources, preserve and maintain the significant heritage resources of the State," and
- 27 "administer the cultural and heritage properties under its control in a spirit of
- 28 stewardship and trusteeship for future generations..."
- 29 Although cultural and paleontological resources are not generally considered Public
- 30 Trust resources under the common law Public Trust Doctrine, they are important
- 31 resources that maintain a link to our heritage and provide opportunities to gain scientific
- 32 knowledge of the earth's past. As indicated above, the CSLC has jurisdiction and
- 33 stewardship responsibilities for cultural resources on lands it administers. Taking into
- 34 account the protection of cultural resources is, therefore, an appropriate factor for the
- 35 CSLC when exercising its public trust responsibilities.

- 1 Cultural resources help define human history, remind us of our interdependence with
- 2 the land, and show how cultures change over time. Cultural resources can be found in
- 3 locations where people lived out every-day life, leaving structures and objects as
- 4 evidence of how they lived, where important events occurred, and where traditional,
- 5 religious, ceremonial, and social activities took place. Protecting cultural resources
- 6 preserves human tradition, culture, and history. Paleontological resources, or fossils,
- 7 are the remains of ancient organisms, and provide the direct evidence of ancient life.
- 8 Preserving these resources provides opportunities for greater scientific understanding of
- 9 the earth's past.
- 10 The city of Malibu's past includes a long record of Native American Chumash
- occupation, including an active community today, as well as potential historic ranching
- and maritime activity. The city's civic center is located near the historic Chumash village
- of Humaliwo at the mouth of Malibu Creek. The potential also exists for archeological
- remains from Chumash occupation to occur within the greater Project area, particularly
- 15 given the proximity of Trancas Creek. Additionally, although no historic designated
- homes or ranches are located in the Project area, maritime activity may have resulted in
- 17 shipwrecks and other historical materials within the sand borrow site areas in the Off-
- 18 site Project areas.
- 19 Definition of Cultural and Paleontological Resources
- 20 Cultural Resources
- 21 Cultural resources are defined as the collective evidence of the past activities and
- 22 accomplishments of people. These resources include any object, building, structure,
- 23 site, area, place, record, or manuscript determined to be historically significant or
- 24 significant in the architectural, engineering, scientific, economic, agricultural,
- educational, social, political, military, or cultural annals of California. Cultural resources
- are finite, non-renewable resources that cannot be returned to their original state if they
- are destroyed.
- 28 A cultural resource may be considered significant if it meets one or more criteria for
- 29 listing on the California Register of Historical Resources, as determined by the
- 30 California Code of Regulations¹:
 - Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
 - (2) Is associated with the lives of persons important in our past;

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¹ §5024.1, Title 14 CCR, §4852

- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
 - (4) Has yielded, or may be likely to yield, information important in prehistory or history.
- Under state law, any submerged archaeological site or submerged historic resource remaining in state waters for more than 50 years is presumed to be archaeologically or historically significant. (Pub. Resources Code, § 6313 subd. (c).)
- 9 Cultural resources associated with the Project may include both historic and prehistoric
- 10 resources. Historic resources may include, but not be limited to, historic ranch buildings
- or other early homes, shipwrecks, discarded debris, or materials intentionally placed to
- 12 provide artificial reefs. Prehistoric resources may include, but not be limited to,
- 13 submerged artifacts such as cobble mortars, pestles, net weights, metates (stone
- mortars), flaked stone tools, or other items (Masters 1983; Masters and Gallegos 1997).
- 15 Prehistoric resources may include, but not be limited to, preserved deposits of
- 16 prehistoric habitation debris on the continental shelf that were inundated during marine
- transgression beginning approximately 11,000 years ago near the start of the current
- 18 Holocene epoch.

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- 19 Paleontological Resources
- 20 Paleontological resources are fossilized remains of ancient plants and animals, and
- 21 associated deposits. Protection of these resources is important because they provide
- 22 the only direct evidence of ancient life. For the purpose of this analysis, scientifically
- 23 significant paleontological resources are defined as vertebrate fossils that are
- 24 identifiable to taxon and/or element, noteworthy occurrences of invertebrate and plant
- 25 fossils, and vertebrate trackways.
- 26 Historical Context of the Project Vicinity
- 27 Cultural History
- 28 The early prehistory of coastal Southern California remains poorly understood. The
- 29 archaeological record reveals the presence of humans by about 12,000 years ago on
- the Channel Islands (Johnson et al. 2002). In Santa Monica Bay, the Malaga Cove site
- 31 (LAN-138) is also proposed to have an early occupation, perhaps beginning at about
- 32 10,000 9,000 years ago (Moratto 1984). Early coastal sites, those dating more than
- 33 9,000 years old, have been characterized as being part of Moratto's proposed Paleo-
- Coastal Tradition (Glassow 1996). Coastal cultures in existence during the last 9,000
- 35 years are better documented. The Malibu area was historically occupied by two Native
- 36 American tribes: the Ventureño Chumash and the Tongva/Gabrielino. The Chumash
- 37 were considered to be the most advanced native society in California because of their

- 1 emphasis on manufacturing and trade, their development of maritime fishing, and their
- 2 complex bead money system (city of Malibu 1995). Tongva/Gabrielino culture was
- 3 similar to the Chumash, and also was based on a maritime environment and economy.
- 4 In the Malibu area, the prehistoric occupation represents a period of over 9,000 years
- 5 and ended with the beginning of the Spanish colonization of California at Mission San
- 6 Gabriel in 1771 on the San Gabriel River, and Mission San Buenaventura in 1782, in
- 7 what is now Ventura. The Mission Period, during which Native Californians were
- 8 relocated to missions and nearby rancherias, extended to approximately 1834, when
- 9 the Mexican government secularized the missions (city of Malibu 1995).
- 10 The Malibu Pier, an officially recognized historic site, was constructed in 1905 to
- 11 support the operations of Frederick Hastings Rindge's Malibu Rancho. Hides, grains,
- 12 fruit, and other agricultural products were shipped from the pier either directly or by
- transfer to larger vessels. Building materials and other Rancho necessities arrived at the
- pier. In 1934, the pier was opened to the public for pier and charter fishing. Fishermen
- were also shuttled back and forth from the pier and the barge Minnie A. Caine anchored
- a mile off shore. During World War II, the end of the pier also served as a U.S. Coast
- 17 Guard daylight lookout station. Sports fishing boats operated from the Pier until the
- early 1960s. The pier is approximately 10 miles east of Broad Beach; however, the pier
- 19 supported local maritime activity that could have resulted in shipwrecks in the Off-site
- 20 Project area.
- 21 The Chumash Indians
- 22 There are approximately 120 archaeological sites in the city of Malibu. Sites in the
- 23 Santa Monica Mountains include village sites, burial grounds, camps or food processing
- 24 areas, quarries and rock art sites. Many sites have already been destroyed or disturbed.
- 25 Currently, only a small percentage of the area has been surveyed, indicating that
- 26 additional archaeologically significant sites may exist in the Malibu area.
- 27 The east-west trend of the Malibu area resulted in the formation of many places well
- 28 suited to boat launching and up-welling of nutrients, which provided abundant marine
- 29 wildlife. These conditions contributed to a high density of population along the coast.
- 30 The Chumash village that was closest to the Project area was Sumo, situated
- 31 approximately one mile to the southeast. Ethnographic information indicates that Point
- 32 Dume was an important shrine for many native cultures throughout southern California
- 33 (city of Malibu 1995).
- 34 Historic Resources
- 35 There are seven officially recognized historic sites in the city of Malibu, four of which
- 36 include structures; however, none of these historic resources is located within nine
- 37 miles of the site except for Point Dume. Point Dume is listed as a California State

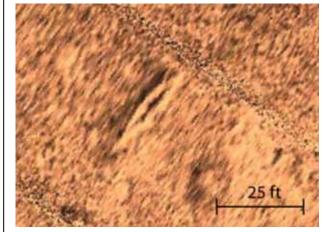
- 1 Landmark (CSL 965), as the western terminus of Santa Monica Bay and has been an
- 2 important landmark for navigators since Vancouver's voyage in 1793. It is recognized as
- a California State Historical Landmark (city of Malibu 1995, California 2012, National
- 4 Park Service 2011).
- 5 Geological History and Potential for Paleontological Resources
- 6 Los Angeles county is one of the richest areas in the world for both fossil marine
- 7 vertebrates and land vertebrates, from sediments deposited over the last 25 million
- 8 years. Many fossilized remains are found in sedimentary rocks of the Santa Monica
- 9 Mountains that have been tilted and uplifted. There are three significant paleontological
- 10 resources in the Santa Monica Mountains in the vicinity of the Malibu area; however,
- only one of these sites is located in close proximity to the city boundary (city of Malibu
- 12 1995), and none of them are located within a mile of the Project. The invertebrate fossils
- found in the area are from the Miocene period. Some of the larger sites containing these
- 14 fossils include Old Topanga Canyon Road near Calabasas Peak and Dry Canyon (city
- 15 of Malibu 1995).
- 16 The Off-site Project areas are located in State tidelands and offshore areas composed
- of unconsolidated sediments that are continually disturbed by ocean activity and coastal
- processes. As a result, there is a low likelihood for the presence of intact paleontological
- 19 resources in these areas.
- 20 Project Area Overview
- 21 Cultural Resources
- 22 No resources listed on the National Register of Historic Places or the California Register
- of Historical Resources occur within the Project area. Further, there is a low potential for
- 24 cultural resources within the area overlying the existing dune and beach. Broad Beach
- 25 is a sandy beach with continual disruptions from wave activity. Episodes of coastal
- erosion and deposition, along with development of the entire back dune area with single
- 27 family homes, reduces the likelihood of intact prehistoric or historic deposits. In addition,
- the western end of the beach is often scoured to rocky intertidal and bedrock layers.
- 29 limiting potential for undiscovered buried cultural remains. A review of archaeological
- 30 studies performed in accordance with development requirements along Broad Beach
- 31 revealed one archeological assessment that was performed for 30980 Broad Beach
- 32 Road as part of the Initial Study/Negative Declaration. This assessment found that
- 33 according to the city of Malibu's Cultural Resource Sensitivity Map, the property is in a
- 34 low-sensitivity area for cultural resources, and therefore the site has low potential of
- 35 containing prehistoric or historic archaeological resources.

1 Paleontological Resources

- 2 There are no significant paleontological resources located within a mile of the Project
- 3 site (city of Malibu 1995). Because known paleontological sites and resources are
- 4 generally confined to uplifted portions of the Santa Monica Mountains, there is a low
- 5 potential for paleontological resources to exist within the Project area. Broad Beach is a
- 6 sandy beach with continual disruptions from wave activity. These conditions
- 7 dramatically reduce the likelihood of intact paleontological deposits.

8 Off-site Project Area Overview

- 9 A cultural resource study was conducted to assess the impact of proposed dredging on
- marine archaeological resources (see Appendix H). The study considered the Central
- 11 Trancas site, a subarea of the Trancas Sediment Deposit located offshore Broad
- Beach, and a site referred to as the "Dockweiler North" site, a subarea of the Dockweiler
- 13 State Beach borrow site offshore Dockweiler Beach in Los Angeles. The Dockweiler
- North site referred to in the cultural resources study in Appendix H is the same site as
- the "Dockweiler" dredge site shown on Figure 2-15, Proposed Dockweiler Sand Source,
- provided in Section 2.0, Project Description, and considered as a sand source for the
- 17 Project. Side scan sonar data was used to look for the presence of historic cultural
- 18 resources, such as shipwrecks at each of the sites. A predictive model for offshore
- 19 prehistoric sites at each site was developed by analysis of geophysical data and
- 20 sediment cores (Hildebrand 2012). The analyses did not include the borrow site at
- Ventura Harbor, as this area is subject to regular dredging and disturbance, and is thus
- 22 extremely unlikely to support historic or prehistoric resources.
- 23 The Central Trancas and Dockweiler
- 24 borrow sites were above water before
- 25 they were inundated by rising sea levels
- 26 approximately 5,000 8,000 years ago,
- 27 a time with known human occupation of
- 28 the Malibu Coast. Thus, the offshore
- 29 borrow sites have the potential to hold
- 30 archaeological remains from the earliest
- 31 periods of regional human occupation
- 32 (Hildebrand 2012).
- 33 The Central Trancas site is offshore from
- 34 Broad Beach and Trancas Canyon,
- 35 northwest of Point Dume. The water
- depth varies from 45 feet on the northern
- 37 edge of the proposed borrow site to 60
- 38 feet on the southern edge. The



The side scan sonar data did not reveal any objects suggestive of historic materials at the Central Trancas site. However, approximately 4,000-5,000 feet to the southeast of the site, a field of debris was imaged, including this object with the shape of a small craft.

- 1 Dockweiler site is located in Santa Monica Bay, to the south of the entrance to Marina
- 2 del Rey and the mouth of Ballona Creek. The water depth varies from 40 feet along the
- 3 eastern edge of the proposed borrow site to 50 feet along the western edge (Hildebrand
- 4 2012).

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- 5 The side scan sonar data suggests that neither of the dredge sites contain historic
- 6 material. The data at Central Trancas did not reveal any objects suggestive of historic
- 7 materials; however, approximately 4,000-5,000 feet to the southeast of the site a field of
- 8 debris was imaged, including an object with the shape of a small craft. The data at
- 9 Dockweiler revealed three areas adjacent to the dredge site with debris or other materials
- on the seafloor, but did not reveal any potential historic materials at the actual site
- 11 (Hildebrand 2012). One of the areas of debris outside of the Dockweiler site is located to
- the south in a study area that was previously considered as a sand source and referred to
- as the "Dockweiler South" site. The "Dockweiler South" is no longer under consideration
- 14 as a sand source for the Project.
- 15 Both borrow sites have low to moderate potential for archeological sites. The potential
- 16 for archaeological sites at the Central Trancas borrow site varies by location within the
- survey area. At depths less than 9 feet the potential for encountering prehistoric cultural
- materials is low since these are recent offshore-deposited sediments. At depths of 9 to
- 19 12 feet the sensitivity for prehistoric materials is moderate, owing to its position on a
- 20 river channel margin. The potential for archaeological sites at the Dockweiler North site
- 21 is low, due to the presence of offshore sediments and Pleistocene sands at the seafloor.

Table 3.10-1. Summary of Potential Occurrence of Prehistoric and Historic Materials

Dredge Site	Potential Occurrence of Historic Materials	Potential Occurrence of Prehistoric Materials
Central Trancas	Low	Low at 0 - 9 feet Moderate at 9 - 12 feet
Dockweiler	Low outside side scan sonar target areas Moderate within target areas	Low

Source: Cultural Resources Assessment (see Appendix H).

The Ventura Harbor sand trap borrow site is unlikely to contain prehistoric or historic material due to substantial past disturbance and ongoing deposits of new sand into the area. In the past, this area was heavily altered by the U.S. Army Corps of Engineers to ensure operation of the federal navigation channels of Ventura Harbor. The area is now dredged on an annual basis to maintain operation of the harbor by ensuring that the waterway remains navigable. Sand continually enters the area because of natural sand flows from north to south along the California coast. That flow is disrupted by the jetty used to form the harbor entrance, resulting in excess sand that must be dredged from

- the sand trap. Due to these conditions, the likelihood of intact prehistoric or historic
- 2 deposits at the dredge site is very low.

3 3.10.2 Regulatory Setting

- 4 State
- 5 California Coastal Act
- 6 The California Coastal Act (CCA) is the foundation of the California Coastal
- 7 Management Program (CCMP), which includes the basic policies for managing and
- 8 balancing the use of resources for state and national interests in the California Coastal
- 9 Zone. The enforceable policies of the CCMP are the Chapter 3 policies of the CCA.
- 10 These policies address critical coastal resource issues including public coastline
- 11 access, coastal and inland recreation, low-cost visitor activities, protection and
- 12 enhancement of sensitive habitat and species, water quality, agricultural and visual
- resources, archaeological and paleontological resources, and natural hazards. Section
- 14 30116 names archaeological sites referenced in the California Coastline and Recreation
- 15 Plan or designated by the State Historic Preservation Officer (SHPO) as sensitive
- 16 coastal resources. Section 30244 requires reasonable mitigation measures where
- 17 development would adversely impact archaeological resources as identified by the
- 18 SHPO.
- 19 California Public Resources Code
- 20 Under California Public Resources Code (PRC) section 6313, subdivision (a) "[t]he title
- 21 to all abandoned shipwrecks and all archaeological sites and historic resources on or in
- 22 the tide and submerged lands of California is vested in the state. All abandoned
- 23 shipwrecks and all submerged archaeological sites and submerged historic resources of
- 24 the state shall be in the custody and subject to the control of the commission for the
- benefit of the people of the state of California." Removal or damaging these resources
- 26 without authorization is prohibited under PRC section 6314, subdivision (a).
- 27 The PRC also addresses protection of archaeological, paleontological, and historical
- features on public land. Section 5024.1 establishes the California Register of Historical
- 29 Resources and provides a definition for historical resources; definitions are also
- included in the California Code of Regulations, Title 14, Section 4852. Section 5097.5 of
- 31 the PRC prohibits excavation or removal of any "archaeological, paleontological or
- 32 historical feature, situated on public lands, except with the express permission of the
- 33 public agency having jurisdiction over the lands."

- 1 Local
- 2 City of Malibu Local Coastal Program
- 3 The Malibu Local Coastal Program (LCP) contains the principal land use policies for
- 4 development within the city of Malibu's Coastal Zone. This program, pursuant to
- 5 requirements of the CCA (Section 30108.5), contains the relevant portion of the city of
- 6 Malibu General Plan—Conservation Element, which indicates the kinds, location,
- 7 intensity of land uses, the applicable resource protection and the development policies,
- 8 as well as a listing of implementing actions. The Malibu LCP includes the following
- 9 policies aimed at protecting cultural and paleontological resources:
- Policy 5.60: New development shall protect and preserve archaeological, historical and paleontological resources from destruction, and shall avoid and minimize impacts to such resources.
- Policy 5.61: Where development would adversely impact archaeological or paleontological resources as identified by the SHPO, reasonable mitigation measures shall be required.
- Policy 5.63: Coastal Development Permits for new development within archaeologically sensitive areas shall be conditioned upon the implementation of the appropriate mitigation measures.
- Policy 5.64: New development on sites identified as archaeologically sensitive shall include on-site monitoring of all grading, excavation and site preparation that involve earth moving operations by a qualified archaeologist(s) and appropriate Native American consultant(s).
- 23 Paleontological resources are addressed along with cultural resources in the Malibu
- 24 LCP: specifically, paleontological resource protection is addressed in Policy 5.60 and
- 25 Policy 5.61 above.

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3.10.3 Public Trust Impact Criteria

- 27 The Project would have substantial adverse impacts to cultural and/or paleontological
- 28 resources if it would result in:
 - Physical destruction, relocation, or alteration of a significant cultural resource or its immediate surroundings, such that the significance of the resource would be materially impaired.
 - Direct or indirect destruction of a significant paleontological resource or site or unique geologic feature.

34 3.10.4 Public Trust Impact Analysis

- 35 Impacts to cultural and paleontological resources can occur either directly or indirectly.
- 36 Direct impacts can result from ground disturbances directly and indirectly caused by

Project activities. For example, if there were historic or prehistoric cultural resources on 1 2 or below the seafloor, dredging operations could disturb and possibly destroy these 3 resources by scraping or otherwise agitating sea floor sediment and using suction to collect sediment for transfer. Also, if there were cultural resources buried on the beach, 4 placement of additional sand and operation of heavy machinery could crush or 5 otherwise destroy these resources. Paleontological resources could be subject to 6 7 similar impacts if present on the seafloor or on the beach. If there were cultural or paleontological materials in the area immediately offshore from Broad Beach, these 8 9 resources may get buried deeper in sand, but would be otherwise unaffected. Cultural and paleontological resources could also face indirect impacts due to increased access 10 to historical sites (i.e., construction employees or new site visitors participating in 11 unauthorized artifact collecting). 12

Potential for impacts to subsurface cultural and paleontological resources is limited since the Project area is on a sandy beach regularly disturbed by wave activity, which reduces the likelihood of intact historic or prehistoric cultural deposits and significant paleontological resources. In addition, the entire back beach area has been developed with single family homes and associated secondary structures, septic systems, patios and landscaping. There are no known prehistoric or historic archeological sites in the vicinity of the Project area. Reviews of cultural resources in the Project area and the Off-site Project areas have not identified significant cultural resources that could be disturbed by Project activities. Additionally, there are no known, significant paleontological sites on Broad Beach.

- Impact CR-1: Disturbance of a Significant Cultural or Significant Paleontological Resource due to Construction of the Emergency Revetment
- Construction of the emergency revetment may have disturbed cultural or paleontological resources or their surroundings on Broad Beach (Unsubstantial, Class U).
- 28 Impact Discussion

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Construction of the emergency revetment is unlikely to have impacted subsurface cultural or paleontological resources because the disturbance was limited to a dune area and sandy beach regularly disturbed by wind and ocean current activity. This environment reduces the likelihood of intact prehistoric or historic cultural deposits, as well as intact paleontological deposits. There are no officially recognized historic resources within nine miles of the site except for Point Dume, a formally listed State Landmark and local beach area one mile away from Broad Beach that is not impacted by the revetment. There are no formally listed cultural resource sites on Broad Beach and there is a low potential for cultural resources within the beach. A review of archaeological studies prepared for residential homes along Broad Beach revealed that an archaeological assessment was performed on one property. The assessment found

- that the property is in a low-sensitivity area for cultural resources and has low potential
- 2 of containing prehistoric or historic archaeological resources. Also, there are no known,
- 3 significant paleontological sites on Broad Beach, and no cultural or paleontological
- 4 resources were discovered during the construction of the revetment. Given the low
- 5 likelihood of cultural and paleontological material occurring at Broad Beach,
- 6 construction of the revetment is not likely to have affected cultural resources.
- 7 Impact CR-2: Disturbance of a Significant Cultural or Significant Paleontological
- 8 Resource or its Surroundings due to Dredging and/or Beach Nourishment
- 9 Dredging and/or beach nourishment activities may disturb cultural or
- paleontological resources or their surroundings in the Broad Beach Restoration
- 11 and/or Borrow Sites Project areas (Unsubstantial with Implementation of
- 12 Avoidance and Minimization Measures, Class UI).
- 13 <u>Impact Discussion</u>
- 14 An assessment of the Project area indicates that the potential for Project impacts on
- cultural resources is limited due to (1) the low potential for cultural resources within the
- site, and (2) the low potential for the placement of sand to affect existing cultural
- 17 resources that have not been previously identified.
- 18 Broad Beach is a sandy beach with continual disruptions from wave activity. These
- 19 conditions reduce the likelihood of intact prehistoric or historic deposits. A review of
- archaeological studies prepared for residential homes along Broad Beach revealed that
- 21 an archaeological assessment was performed on one property. The assessment found
- that the property is in a low-sensitivity area for cultural resources and has low potential
- 23 of containing prehistoric or historic archaeological resources. There are no officially
- 24 recognized historic resources within nine miles of the site except for Point Dume, a
- 25 formally listed State Landmark, and a local beach area one mile away from Broad
- 26 Beach that would not be impacted by the dredging or beach nourishment. Due to the
- 27 low potential for cultural resources in the site, operation of heavy machinery at Broad
- 28 Beach has low potential for disturbing cultural resources. Therefore, this would not be
- 29 considered a substantial impact to cultural resources. Beach nourishment entails
- 30 depositing additional sand on the beach. In the event that historic or prehistoric
- 31 resources are present in the existing sand on Broad Beach, these resources would be
- 32 further buried by sand after the Project is completed. Therefore, this activity would not
- 33 constitute a substantial impact.
- Potential impacts to cultural resources at the Off-site Project areas are limited as well.
- 35 Side scan sonar, geophysical data, and sediment cores were used to determine the
- 36 likelihood of the presence of cultural resources at the Central Trancas and Dockweiler
- 37 North dredge sites. The Ventura Harbor sand trap has low potential of containing
- 38 cultural resources due to past dredging and disturbance at this site.

According to the analysis of side scan sonar, the Central Trancas dredge site is unlikely 1 2 to contain historic material. However, sediment core data revealed the potential for 3 archaeological sites varies with location within the survey area. Side sonar data revealed that the Central Trancas dredge site is in the vicinity of neighboring sites that 4 may have potential for archaeological material. The potential archaeological sites in the 5 vicinity of the Central Trancas dredge site would be avoided to reduce potential impacts 6 7 from dredging operations. Sediment core data showed the potential for encountering prehistoric cultural materials at depths less than 9 feet is low, since these are offshore 8 9 deposited sediments. However, from 9 to 12 feet, the sensitivity for prehistoric materials is moderate, owing to its position on a river channel margin. Dredge material would be 10 monitored with frequent spot-checks to reduce potential impacts. 11

12 The potential for archaeological sites is low at the Dockweiler site, owing to the presence of offshore sediments and Pleistocene sands at the seafloor. According to the 13 14 analysis of side scan sonar, the Dockweiler dredge site is unlikely to contain historic material; however, the Dockweiler dredge site is in the vicinity of neighboring sites that 15 16 may have potential for archeological material: this includes a field of debris that is 17 located immediately to the south in the northern portion of the Dockweiler South site. 18 The potential archeological sites in the vicinity of the Dockweiler dredge site would be 19 avoided to reduce potential impacts from dredging operations. Given that this dredge 20 sites is unlikely to contain archeological material, the Project is expected not to have a 21 substantial impact on cultural resources.

- The potential for archaeological sites is low at the Ventura Harbor sand trap dredge site due to substantial past disturbance and ongoing deposits of new sand into the area. The area is dredged on a regular basis to remove excess sand entering the site and to maintain operation of the harbor by ensuring that the waterway remains navigable. Due to these conditions, the likelihood of intact prehistoric or historic deposits at the dredge site is very low. Therefore, dredging operations at this location would not have a substantial impact on cultural resources.
- Although the Dockweiler South dredge site is no longer being considered as a sand source for the Project, this site has not undergone a formal analysis to assess the potential presence of cultural resources and the potential for archaeological sites in this area is unknown, other than the aforementioned debris located in this area. An AMM is recommended below in the event this sand source is a candidate for dredging in the future.
- Potential impacts to paleontological resources at the Project area and borrow sites are limited due to the low potential for paleontological resources at any of these sites. There are no known, significant paleontological sites on Broad Beach or at any of the dredge sites. Additionally, all of these sites are at the shoreline or directly offshore, where there

- 1 is a low probability of the presence of paleontological resources. Therefore, the Project
- 2 is expected not to have a substantial impact on paleontological resources.
- 3 Avoidance and Minimization Measures
- 4 The Project area is regularly disturbed by ocean current activity, which reduces the
- 5 likelihood of intact cultural or paleontological deposits. Therefore, no further cultural or
- 6 paleontological resource studies are required for this area. However, an avoidance and
- 7 minimization measure is proposed to address potential impacts to cultural resources
- 8 within the dredge sites.

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- AMM CR-2a. Cultural Resource Monitoring Program. A monitoring program shall be implemented to identify unanticipated cultural resources encountered during dredging operations at the Central Trancas and the Dockweiler dredge sites. Monitoring procedures shall be specified in a monitoring plan that is approved before dredging is initiated. The monitoring program shall involve periodic spot checks by a qualified archaeologist throughout all dredging operations. If dredging operations enter the 9-12 foot range at the Central Trancas dredge site, where potential for prehistoric resources increases from "low" to "moderate", the frequency of spot checks shall increase. A qualified archaeologist shall be retained on-call for the duration of dredging operations to assess potential cultural material encountered by dredge operators. If monitoring reveals cultural materials, indicating that dredging has entered into an archaeological deposit, then the dredging operation shall be permanently relocated away from that site and a 250-foot-wide buffer shall be established around the site.
- AMM CR-2b. Cultural Resource Investigation of Dockweiler South. The northern portion of the Dockweiler South site shall not be used for dredge material without further evaluation of the potential for archaeological sites in the area. In the event this area is evaluated and selected for dredging, measures would go into effect to protect the field of debris that was identified in the side scan sonar data for the Dockweiler site. This target site would be either (1) avoided during dredge operations and protected with a 250-foot buffer area around the debris, or (2) analyzed for potential presence of cultural material, and in the event there is potential cultural material, it would be avoided during dredge operations and protected with a 250-foot buffer area around the debris. This site would also be included in the monitoring program outlined in AMM CR-2a.

1 Rationale for Avoidance and Mitigation Measures

- 2 The above avoidance and minimization measures would reduce the probability of
- 3 disturbing significant cultural resources or significant paleontological resources during
- 4 dredging operations. Full implementation of these measures would ensure that impacts
- 5 are not substantial. A monitoring program is not necessary at the Ventura Harbor
- 6 dredge site, since it would be highly unlikely to encounter cultural or paleontological
- 7 material either at the site or in the general vicinity. This site has been dredged on a
- 8 routine basis since 1985, and due to the consistent disturbance, the likelihood of
- 9 encountering cultural or paleontological resources is negligible.

Table 3.10-2. Summary of Cultural and Paleontological Resource Impacts and Avoidance and Minimization Measures

Impact	Avoidance and Minimization Measures
CR-1: Disturbance of a Significant Cultural or Significant Paleontological Resource due to Construction of the Emergency Revetment	No AMMs recommended
CR-2: Disturbance of a Significant Cultural or Significant Paleontological Resource or its Surroundings due to Dredging and/or Beach Nourishment	AMM CR-2a. Cultural Resource Monitoring Program AMM CR-2b. Cultural Resource Investigation of Dockweiler South

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